

were identified within the project area largely as a result of these surveys (Fig. 2a). These surveys, along with less systematic inventories, contributed many records for rare species and high quality natural communities found in this region. Within the limits of the study area, the Natural Heritage Program database contains 2,095 occurrence records for plants, 859 for animals, 729 for natural communities, and 73 for special animal habitats (Fig. 2b).

- Four surveys conducted by the Natural Heritage Program of the lepidoptera associated with specific natural communities (Hall and Schweitzer, 1993; Hall and Sullivan, 1997; LeBlond, et al., 1997; Hall, et al., 1999a). Sampling was conducted over a number of sites within the study area (Fig. 2c) and included representatives of most of its natural communities. Over 700 species of macro-moths were documented and categorized, at least tentatively, according to habitat affinity.
- Vertebrate species collection records from the Museum of Natural Sciences. 2,271 site records, for 107 species, were digitized for this project (Fig. 3).
- A digital map of vegetation cover produced from satellite imagery and supplementary data by NCGAP. This map is still under development and does not entirely cover the study area. The version used in this report is illustrated in Figure 4.

The amount of data available for the study area was one of the principal reasons for its selection for regional conservation analysis. We used this information to consider the conservation needs of individual element species in more detail than is usually possible in the state-wide analysis of priorities conducted by the Natural Heritage Program. We also interpreted patterns of landscape integrity and discontinuity based more on site-specific data than is usually done in landscape analysis. By integrating these two approaches, which have off-setting strengths and weaknesses, we achieved a more comprehensive analysis than we could have done using either of the two by themselves.

## **Site-Oriented and Landscape-Oriented Approaches to Conservation Analysis**

Natural Heritage Programs follow a site-oriented approach in identifying conservation priorities. They rank the conservation significance of individual species and natural communities -- Natural Heritage Elements -- based on the number and quality of occurrences, as represented by site-specific records. Significance ranks are similarly assigned to natural areas -- Significant Natural Heritage Areas (SNHAs) in NC NHP terminology -- based primarily on the element occurrences contained within their boundaries (see Determination of Site Significance for details).

The reliance on site-specific data is one of the strengths of this approach, as is standardization of element ranking procedures across the Natural Heritage Program/Nature Conservancy network. In North Carolina, this approach serves to focus inventories on arguably the highest quality sites within a county, region, or the entire state, and on the elements in greatest danger of extirpation or extinction. Given the labor intensiveness and other problems inherent in conducting ground-based surveys, this sort of focus is essential to achieve maximum efficiency, which is itself